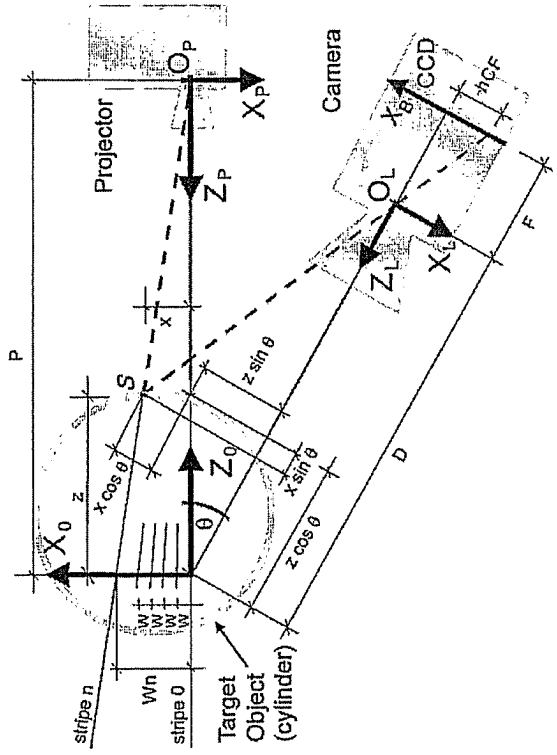
Projector
Camera
CCD
O_P
X_P
Z_P
O_L
X_L
Z_L
X_S
F
CF
P
S
x
z sin θ
x sin θ
Z_0
X_0
θ
x cos θ
z
z cos θ
D
W
Wn
stripe n
stripe 0
Target Object (cylinder)

Fig. 1

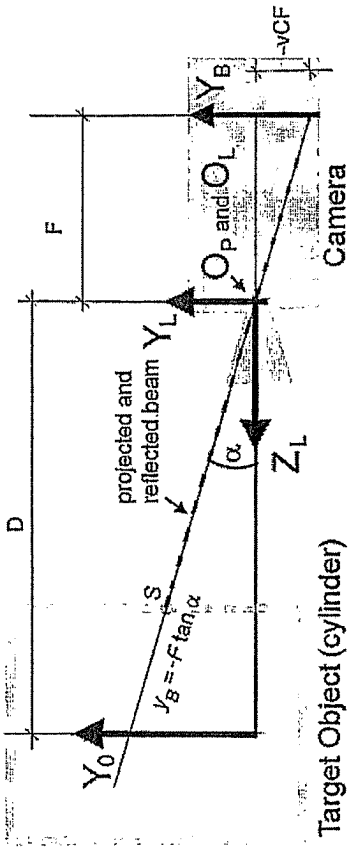
-vCF
Y_B
O_L
O_P and
Camera
F
Y_L
projected and
reflected beam
Z_L
α
D
S
$y_B = -F \tan_1 \alpha$
Y_0
Target Object (cylinder)

Fig. 2

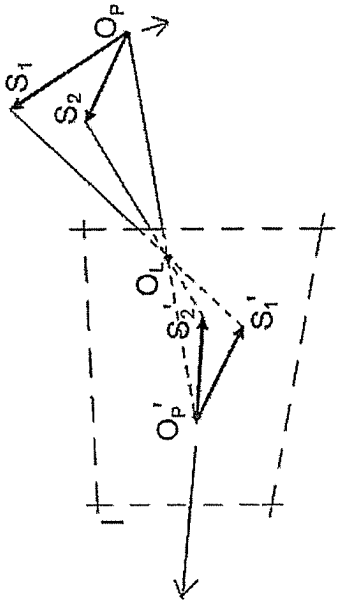

Fig. 3

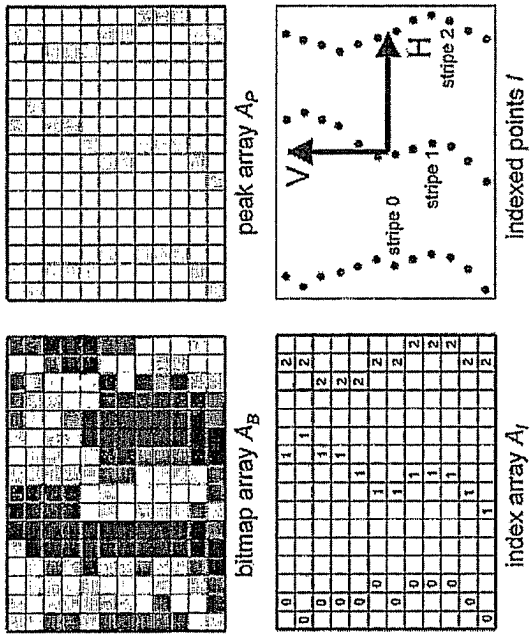
peak array A_P
indexed points I
V
H
stripe 0
stripe 1
stripe 2
bitmap array A_B
index array A_I

Fig. 4

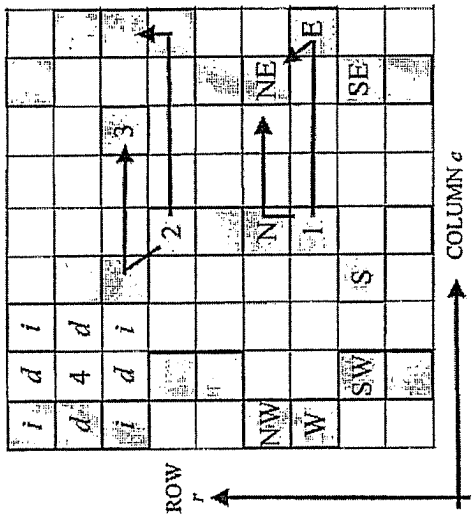

Fig. 5

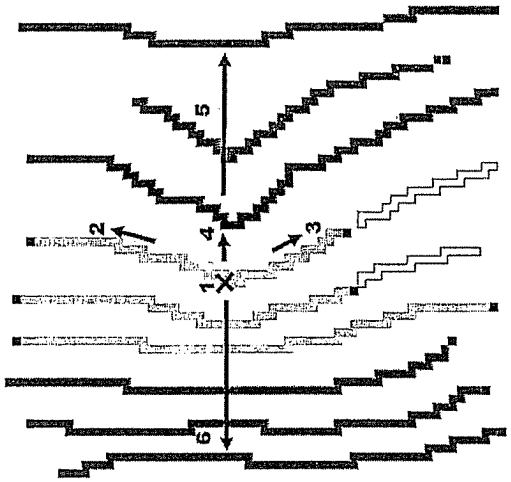

Fig. 6

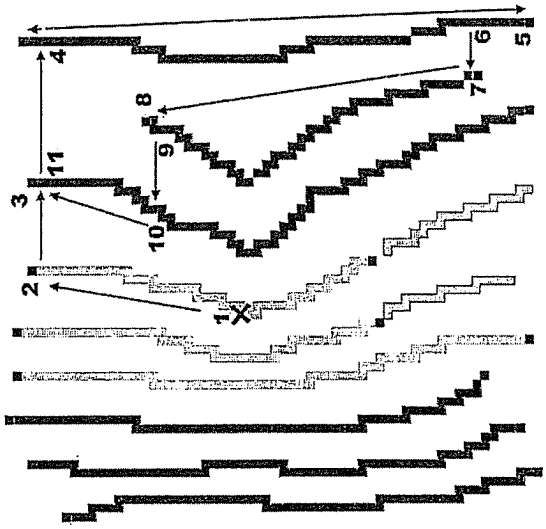

Fig. 7

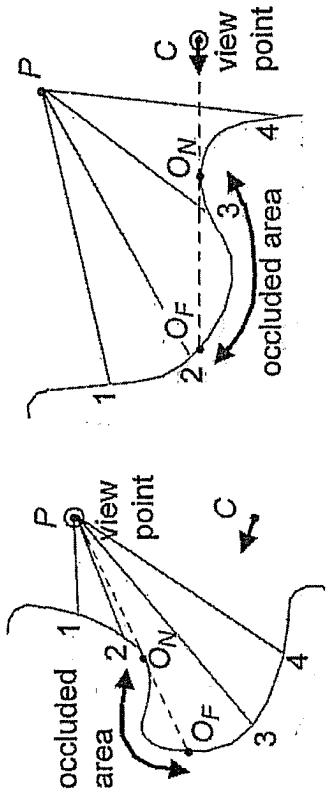
P
C
view point
O_N
O_F
1
2
3
4
occluded area
P
view point
C
occluded area
1
2
O_N
O_F
3
4

Fig. 8

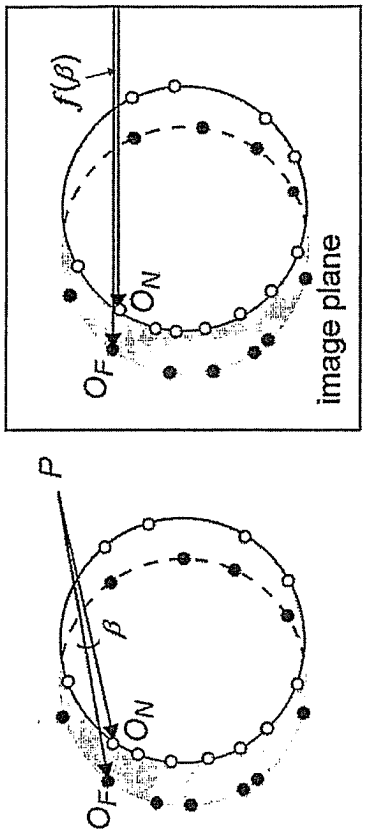

Fig. 9

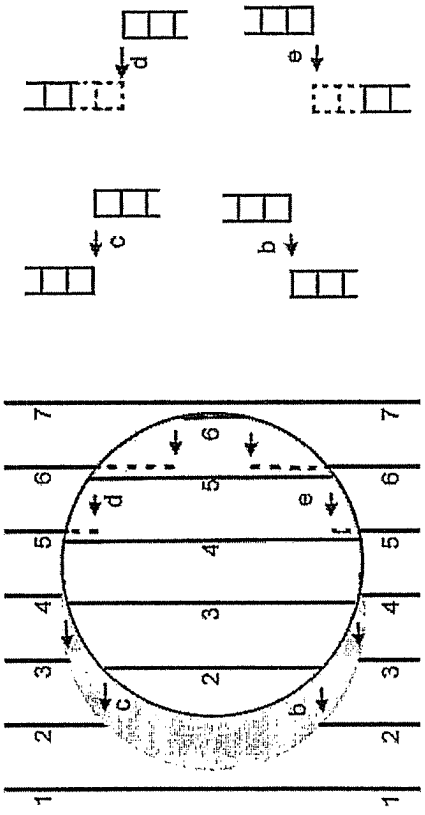

Fig. 10

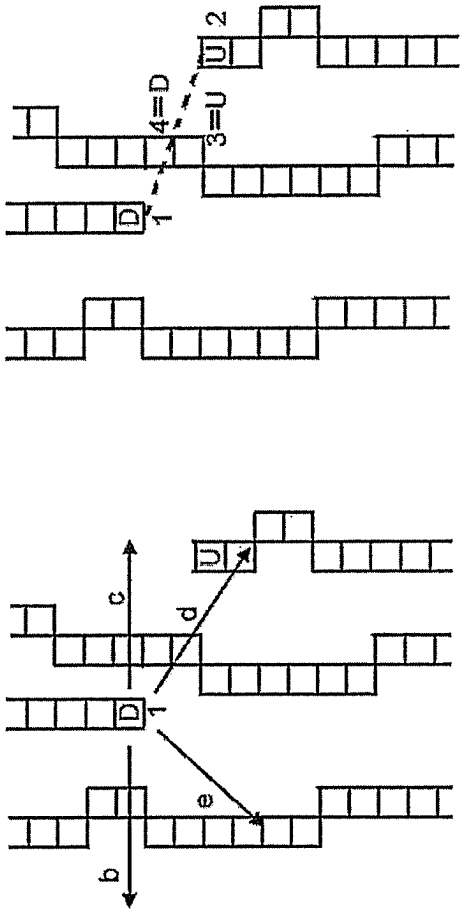

Fig. 11

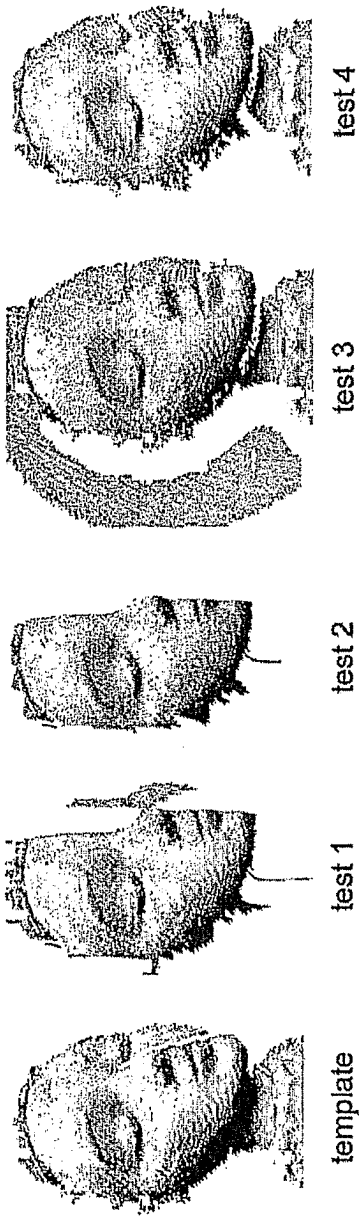

Fig. 12

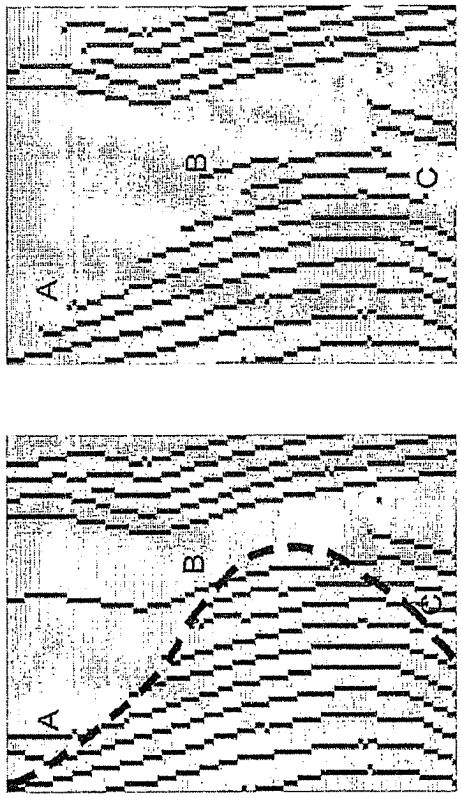

Fig. 13

Test no:	Occlusion detection	Algorithm type	Corresponding peaks *C*	Miscorresponding peaks *M*	Noncorresponding peaks *X*	Total Peaks *C + M + X*
1	**NO**	**stripe tracer**	**18681**	**2304**	**362**	**21347**
2	*YES*	*stripe tracer*	*17332*	*0*	*0*	*17332*
3	**NO**	**flood filler**	**26120**	**5188**	**14333**	**45641**
4	*YES*	*flood filler*	*25668*	*2175*	*31*	*27874*

Fig. 14